

September 3, 2019

PUBLIC UTILITIES COMMISSION  
Investigation into Central Maine Power  
Company's Metering and Billing Issues

BENCH ANALYSIS

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## **I. INTRODUCTION AND SUMMARY**

The Commission Staff submits this Bench Analysis as allowed by the August 1, 2019 Procedural Order (Scheduling) in this docket. The Bench Analysis: (1) briefly lays out the circumstances that led the Commission to open this docket; (2) describes the statistics relating to high bills of customers of Central Maine Power Company (CMP or the Company) for winter 2017/2018; (3) summarizes the conclusions of the forensic audit of the Commission's consultant, The Liberty Consulting Group (Liberty), relating to metering and billing; (4) lays out the Staff's analysis comparing CMP's high bills with the bills of Emera Maine over the same winter period; and (5) describes the Staff's proposal for addressing the questions of individual CMP customers about their metered electricity consumption.

The Staff's criticisms and proposed remedies regarding CMP's customer-service issues are laid out in the Bench Analysis and Reply Bench Analysis in Docket No. 2018-00194. While customer-service issues are being addressed in Docket No. 2018-00194, issues related to high usage or high bills are being addressed in this docket.

As detailed in section III below, the Staff's analysis shows that in the winter of 2017/2018, Emera Maine's residential customers experienced comparable increases in billed kWh usage over the prior winter as CMP's customers. This leads the Staff to

conclude, consistent with Liberty's findings, that the fact that customer bills reflected relatively high energy usage (and thus high billed amounts) for that period was a result of weather, and not a systemic error in CMP's metering or billing system.

## **II. BACKGROUND**

### **A. Overview**

In late October 2017, CMP went operational (or "live") with its new customer billing system, which is known as SmartCare. At almost the same time, an extraordinary wind storm caused the largest power outage in CMP's history, affecting approximately three out of every four CMP customers. Two months later, standard-offer prices for residential electricity supply in CMP's territory increased by 18%. In the ensuing months, the Commission's Consumer Assistance and Safety Division (CASD) received numerous complaints from customers of CMP related to high bills and possible billing errors, and difficulties in reaching CMP's customer service center. In response to these complaints, on March 1, 2018, the Commission initiated a summary investigation of CMP's metering and billing issues under 35-A M.R.S. § 1303. See *Public Utilities Commission, Investigation of Central Maine Power Company Metering, Billing and Customer Communication Issues*, Docket No. 2018-00052, Notice of Investigation at 1 (Mar. 1, 2018). As part of that investigation, the Commission engaged Liberty to audit CMP's metering and billing systems.

### **B. Description of CMP's High-Bill Statistics for Winter 2017–2018**

As part of the summary investigation in Docket No. 2018-00052, the Staff served several data requests on CMP. As part of data request EXM-001-001, the Staff requested that CMP provide the total monthly and average daily usage for December 2017, January 2018, and February 2018 (Winter 2) and the corresponding months of

the prior year (Winter 1) for all residential customers whose bills in any of those months indicated a year-over-year total or average daily usage increase of 50% or more in Winter 2 compared to Winter 1. In response to EXM-001-001, CMP provided the requested information, which indicated that there were 90,044 unique customer accounts for which there was a total monthly usage increase of 50% or more in at least one of the Winter 2 months as compared to the same month in Winter 1.

Staff notes that, for a number of these 90,044 customers, even though the year-over-year increase was 50% or more, the actual billed kWh usage was quite low. For example, for approximately 4,500 customers (5% of the total), the billed amount was 50 kWh or less in one or more of these months. Because CMP's monthly fixed charge for the residential class in which most customers receive service (Rate A) includes 50 kWh, these customers' billed dollar amounts would not have been affected by the year-over-year usage increase. Staff notes, further, that approximately 14,600 of the 90,044 customers (16% of the total) had billed kWh usage of 100 kWh or less in one or more of these months, which, in Staff's view, does not fall into the category of "high use." The treatment of these low-use customer bills in the Staff's CMP-Emera Maine comparative analysis is discussed in section III below.

C. Summary of Analysis and Conclusions of Liberty Audit Relating to Metering and Billing

Liberty submitted its final report (Liberty Report or Audit Report), along with an executive summary, on December 20, 2018.<sup>1</sup> The Commission also summarized the

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<sup>1</sup> All of Liberty's analyses—on weather data, on CMP's meter clocks, etc.—and conclusions are laid out in detail in its final report. The Liberty Report, along with its Executive Summary, was issued on December 20, 2018 in Docket No. 2018-00052, and it was filed in this docket on February 22, 2019.

analysis and conclusions of Liberty's audit in its order opening this case. See Jan. 14, 2019 Order and Notice of Investigation at 3–4. The Staff does not repeat the Liberty Report's analysis or its conclusions in full here. Instead, to summarize, Liberty reported the following analyses done in the course of its metering and billing audit:

- Liberty examined (among other things) CMP system data for every CMP customer account and meter—about 650,000 meters, including 7,400 manually read meters—for the six-month period of November 2017 through April 2018. See Dec. 20, 2018 Liberty Report at 5.
- For all 650,000 accounts, Liberty audited the data at each step of CMP's system—from the head-end system or field-collection system, to the meter data management system, to the customer-billing system (SmartCare). This study involved reviewing about 4 million billing records, and about 2.3 billion data points to trace the system data from end to end. *Id.*
- Liberty also tested a statistically significant sample of meters of (60) of CMP customers. *Id.* at 16.
- Liberty performed a complex analysis of weather data for November 1, 2017 to April 30, 2018, to determine whether variations in metered usage correlated to variations in temperatures during that period.

Based on its analysis, Liberty concluded the following:

- Liberty found that one category of CMP's AMI meters (GE) contained an anomaly that resulted in metering errors, under certain unusual circumstances, and that CMP's management failed to address this problem promptly.

- Liberty concluded that there were no systemic problems with CMP's metering or billing systems. *Id.* at 19 ("CMP meters produce accurate measurements of customer usage, and have done so since November 1, 2017."), 44–45 (finding no errors in transmission of meter usage registration).
- As for charges on customers' bills, Liberty found that during the study period, delivery billing determinants matched the information on customers' bills 99.9% of the time, and supply determinants matched customers' bills 99.8% of the time. *Id.* at 49. Thus, errors related to billed usage amounts did not materially contribute to erroneous bills during the period of November 2017 through April 2018. *Id.*
- Ultimately, Liberty concluded that customers' high bills were caused by two things: (1) weather that was significantly colder than normal, and (2) the 18% standard-offer price increase for CMP's residential customers, which went into effect January 1, 2018.

### **III. COMPARISON OF THE EXPERIENCE OF EMERA MAINE WITH THAT OF CMP OVER THE WINTER OF 2017/2018**

As noted above, Liberty has concluded that there was no systemic problem with CMP's metering and billing systems at the root of the high bills experienced by CMP customers during the winter of 2017/2018 (Winter 2) compared to the prior winter (Winter 1). Rather, according to Liberty, the high bills and year-over-year increases are explained by the relatively colder weather in Winter 2 as well as a standard-offer price increase that went into effect on January 1, 2018.

Questions have arisen as to why customers in the service territories of other Maine utilities did not experience similar high usage or bill increases—or, more

precisely, why customers in the non-CMP service territories have not reported similar concerns about high use or bill increases. See, e.g., Tr. at 93–94 (June 13, 2019) (questions from the Office of the Public Advocate to CMP regarding experience of Emera Maine as compared to CMP). The Staff believes that these questions are important and worth exploring because they could inform the validity or accuracy of the high usage observed for CMP’s residential customers. Thus, the Staff has endeavored to answer the question of whether Emera Maine’s residential customers experienced usage increases that mirror CMP’s customers usage during the winter of 2017–2018.

To do so, the Staff has reviewed the usage of residential customers in the Bangor Hydro District (BHD) of Emera Maine during the same time periods as covered in CMP’s response to EXM-001-001.<sup>2</sup> As part of this review, Staff requested, and Emera Maine provided, a set of billing data for all residential customers with billed usage in Winter 2 that was higher by 50% or more in any month compared to the same month in Winter 1—essentially, the same information Staff sought from CMP in EXM-001-001. The information provided by Emera Maine did not include data for customer bills in which the usage was 100 kWh or less, presumably for reasons similar to those noted above in section II.B.. Thus, for comparability with the BHD customer data and to screen out data for low use bills, Staff adjusted the CMP EXM-001-001 data such that only bills with monthly usage of more than 100 kWh would be counted as “high use.”

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<sup>2</sup> Staff limited its review of Emera Maine to the BHD given the potential divergence between weather conditions in CMP’s service territory and that of Emera Maine’s Maine Public District.

The results of the Staff's comparative analysis of the CMP and BHD residential customer bill data are shown in Figure 1 below:

**Figure 1**

Residential Accounts with Winter 2017/2018 kWh Usage Increase of 50% or More Compared to Same Month in Winter 2016/2017 ("High Use Customers")

	CMP	Emera Maine BHD
a. High Use Customers	75,439	14,349
b. Total Residential Customers	552,236	103,858
<b>c. Percent (a) / (b)</b>	<b>13.7%</b>	<b>13.8%</b>

*Total residential customers reflects the average during Winter 2.*

As shown in Figure 1, relative to the total number of residential customers in each of the two service territories, the proportion of BHD residential customers with billed-usage increases of 50% or more in Winter 2 compared to the same month in Winter 1 is virtually identical to that of CMP residential customers: 13.8% for BHD vs. 13.7% for CMP. In Staff's view, this corroborates Liberty's finding that the usage increases were driven by weather and not by any systemic problem with CMP's metering or billing systems.

The backup for Figure 1 is provided in Attachments 1–4.<sup>3</sup>

<sup>3</sup> Staff has removed confidential customer information from the source data provided by Emera Maine and has replaced the customer account number with a generic identifier.

#### IV. PROPOSAL FOR INDEPENDENT AUDITS OF CUSTOMER ELECTRICITY CONSUMPTION

##### A. Issue Overview

If, at the end of this investigation, the Commission concludes that there have not been any systemic problems with the Company's billing and metering systems that resulted in high billed-usage amounts, the Staff is nonetheless concerned that a significant number of customers have individual concerns about high use that have not been adequately addressed by the Company. During the public witness hearings, a number of CMP customers testified that they had been billed for unexplained increases in usage that the Company has failed to adequately investigate or explain.<sup>4</sup> Further, a number of customers have filed complaints regarding high use with the Consumer Assistance and Safety Division (CASD) where the CASD did not find evidence of a billing error and neither the CASD nor the Company could find an explanation for the customer's usage.<sup>5</sup> To address this, the Staff recommends that the Commission direct the Company to establish an independent review process for customers who have

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<sup>4</sup> Tr. at 12–16, 20–22, 33–34 (July 16, 2019 Pub. Witness Hr'g).

<sup>5</sup> The CASD requested in early February 2018 that CMP establish a specialized group of individuals who were familiar with CMP's billing and metering processes to investigate and resolve customer complaints of high usage. Under this process, when the CASD receives a customer complaint of high usage, the CASD forwards the complaint to the specialized team, which in turn reviews the customer's account to ensure that bills are accurate and attempts to ascertain the cause of the high bill. If CMP's team can determine the cause of the increased usage or bill amount and resolves the matter to the customer's satisfaction, the CASD will consider the matter closed. If CMP cannot determine the cause of the increased usage or otherwise resolve the matter to the customer's satisfaction, the matter is referred to the CASD. The customer is then notified that their complaint will be incorporated into and addressed through this investigation. As of August 19, 2019, 3,628 customers with high-use concerns have been referred by the CASD to CMP's specialized team. Of the 3,628 customers referred, CMP has been able to reach 2,455 customers and, of these customers, has resolved 1,208 to the customer's satisfaction. That leaves 1,247 customers for whom CMP has not been able to resolve the high-use complaint to the customer's satisfaction.



experienced a significant increase in usage after the implementation of CMP's SmartCare system for which the cause of the increase remains unexplained. This proposal is conditioned on a conclusion in this investigation that there have not been any systemic problems with the Company's billing and metering systems that resulted in high customer billed usage amounts. If a different conclusion is reached by the Commission, the Staff believes that it will be necessary to revisit and re-assess this proposal.

B. Staff's Proposed Independent Review/Audit Process

Under the independent review process, customers would have the option of being referred to an independent entity, such as Efficiency Maine, who would conduct an audit of each customer's electricity usage. During this audit, the independent entity would assess the amount of electricity being consumed at the customer's home compared to the customer's metered and billed kWh usage. If the audit shows that the customer's electricity usage is consistent with the amount of usage being metered and billed, the auditor could advise the customer about options for reducing usage, including energy-efficiency programs offered by Efficiency Maine. If the audit indicates a discrepancy between the customer's electricity usage and the amounts being metered and billed by CMP, an additional analysis and review will be necessary to determine the cause and amount of the discrepancy, as well as to determine an appropriate remedy for the customer.

Staff recommends that the initial population of customers eligible for the independent review be customers who have filed a complaint of high usage with the CASD, and for whom neither the CASD nor the Company has been able to determine

the cause of the high use.<sup>6</sup> Commission Staff also believes it would be appropriate to establish criteria to determine which customer complaints from this initial population that should be referred for independent review and which complaints should be resolved by the CASD (as discussed below). Possible criteria for the independent review process might include that a customer's concern (1) must be related to unexplained high usage (2) the high usage must have occurred after the implementation of SmartCare, and (3) the customer must have filed a complaint of high usage with the CASD. Depending on the findings made during the course of this independent review process, the Commission may then decide to alter or expand this population.

Billing concerns that relate to billing errors or anomalies and not to high usage, such as a customer receiving consecutive months of estimated bills or going consecutive months without receiving bills, will also need to be analyzed to ensure that the customer is being billed correctly.

In Staff's view, customer complaints that involve billing errors or anomalies should be resolved by the CASD or by an alternative process established in this case. At this time, Staff does not have a specific recommendation regarding an alternative process to the CASD. Rather, Staff point outs the potential need for this additional process and recommends that the matter be further considered once the OPA and Liberty complete their respective bill analyses.

The Staff notes that CASD has been performing this bill-error analysis all along since complaints first began to arise about high bills among CMP customers. When the

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<sup>6</sup> Approximately 1,247 customers have filed a complaint of high use with the CASD and CMP's high-use team where the cause of the high use could not be determined to the customer's satisfaction.

CASD receives a billing complaint from a customer, it conducts a preliminary investigation to determine if a billing error or anomaly is involved. If a billing error or anomaly appears to be the cause of the customer's billing concern, the CASD:

(1) determines whether the customer has been billed accurately for the customer's actual usage; and (2) orders the Company to adjust the customer's bill if necessary.<sup>7</sup> If a billing error or anomaly is not at issue and the customer's billing concern relates only to high usage, the CASD refers the customer's complaint to CMP's high-use team for resolution as described in footnote 6.

C. Development of the Independent Review Process

As the Commission stated in its notice opening this investigation, customers must be able to trust the accuracy of their bills and metered usage. Jan. 14, 2019 Order and Notice of Investigation at 8. An independent review of customers' electricity usage can never be done retrospectively—it is impossible to say with accuracy what appliances, lights, electronics, etc., a customer was using at any given time in the distant past, and how much electricity each device used at the time. But audits of customers' consumed usage and metered usage will determine whether the meters on customers' homes are accurately measuring usage at the time of the audit. Such a finding, combined with the deep analysis Liberty conducted on CMP's metering and billing systems, is the best information that can be obtained to address any lingering questions on this subject.

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<sup>7</sup> Since the implementation of SmartCare, the CASD has been able to resolve 1,310 of the 2,107 customer complaints received (62%). Some of the customers included in this statistic were also referred to CMP's high-use team when those customers also had concerns regarding high usage in addition to the billing error or anomaly addressed by the CASD.

The Staff welcomes comments and proposed refinements to the processes discussed in this Bench Analysis so that the Commission can put the appropriate processes in place as expeditiously as possible at the conclusion of this investigation.

## **V. CONCLUSION**

The Staff submits this Bench Analysis in the hope of further developing the record in this proceeding. Any findings and recommendations contained herein are preliminary. The Staff's final recommendations to the Commission will be continued in the Examiners' Report to be issued on December 9, 2019.

Dated: September 3, 2019

Respectfully submitted,



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